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CLAIMS

What is claimed is:

1 1. A method for fabricating radiation-tolerant integrated circuit devices,
2 said method comprising:

3 depositing a layer of pad oxide on a semiconductor substrate;

4 selectively etching said pad oxide layer and said semiconductor
5 substrate to define a trench within said semiconductor substrate; and

6 implanting boron ions at an angle with respect to normal in said
7 trench.

1 2. The method according to Claim 1, wherein said boron ions are
2 implanted beneath the bottom of the trench and along the side walls of the
3 trench.

1 3. The method according to Claim 1, wherein said boron ion implantation
2 is performed with an energy no greater than about 20 KeV.

1 4. The method according to Claim 1, wherein said boron ion implantation
2 is performed with a dose of boron ions in a range between approximately 10^{10}
3 atoms/cm² and 10^{13} atoms/cm².

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1 10. The semiconductor integrated circuit device according to Claim 9,
2 further including an implantation region of electrically neutral material.

1 11. The semiconductor integrated circuit device according to Claim 10,
2 wherein said P-well has diffusion regions within it, and said implantation
3 region of electrically neutral material extends to a depth less than the depth
4 of said diffusion regions.

5 12. The semiconductor integrated circuit device according to Claim 8,
6 wherein said boron ions have a concentration between approximately 10^{10}
7 atoms/cm² and 10^{13} atoms/cm².

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